

Laboratory bioassay of some entomopathogenic fungi against broad mite (*Polyphagotarsonemus latus* Bank)

ABSTRACT

Laboratory bioassay of three entomopathogenic fungi *Beauveria bassiana* (Bals.) Vuill., *Metarhizium anisopliae* (Metch.) Sorokin, *Paecilomyces fumosoroseus* (Wise) Brown & Smith against broad mite (*Polyphagotarsonemus latus* Bank) was evaluated. Effect of these fungi on the broad mite egg was also investigated. Dose mortality bioassay revealed that *B. bassiana* (Glenia celiaisolate, BbGc) caused mortality up to 80.88% at a dose 1×10^8 conidia mL⁻¹ while *M. anisopliae* (Phylotreta striolata isolate, MaPs) and *P. fumosoroseus* (Pteroma pendula isolate, PfPp) caused 60 and 90% mortality, respectively. Significant relationship ($P=0.05$) was obtained between log concentration and probit mortality value for all the three isolates. The effective concentration of *B. bassiana* to kill 50% mite treated (EC₅₀) was the lowest (2.74×10^6 conidia mL⁻¹) followed by that of *P. fumosoroseus* (3.23×10^6 conidia mL⁻¹) and *M. anisopliae* (2.77×10^7 conidia mL⁻¹). The LT₅₀ at comparable dosage (1×10^8 conidia mL⁻¹) of *B. bassiana*, *M. anisopliae* and *P. fumosoroseus* were 3.4 (1.4 - 5.1), 4.3 (3.3 - 5.8) and 2.8 (1.9 - 3.9) days, respectively. Therefore *B. bassiana* proved to be the most effective followed by *P. fumosoroseus* and *M. anisopliae*. However *P. fumosoroseus* caused mortality more quickly than others. There was poor infection on the mite eggs (10%) caused by *M. anisopliae* while no infection was recorded by *B. bassiana* and *P. fumosoroseus*.

Keyword: Bioassay; Broad mite (*Polyphagotarsonemus latus*); *Beauveria bassiana*; *Metarhizium anisopliae*